

Does Shyness Vary According to Attained Social Roles? Trends Across Age Groups in a  
Large British Sample

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### Abstract

**Objective:** The current study investigated a) how a composite measure of shyness comprising introversion and neuroticism relates to other well-known constructs involving social fears, and b) whether mean-levels of shyness vary for men and women depending on the adoption of various social roles. **Method:** Study I used a sample of 211 UK participants aged 17-70 (64% female;  $M_{\text{age}} = 47.90$ ). Study II used data from a large cross-sectional data set with UK participants aged 17-70 ( $N_{\text{target}} = 552,663$ ; 64% female;  $M_{\text{age}} = 34.19$  years). **Results:** Study I showed that shyness measured as a composite of introversion and neuroticism was highly correlated with other constructs involving social fears. Study II indicated that, controlling for various sociodemographic variables, females appeared to have higher levels, whereas males appeared to have lower levels of shyness. Males and females who were in employment had the lowest shyness levels, whereas those working in unskilled jobs had the highest levels and people working in sales the lowest levels of shyness. Participants in relationships had lower levels of shyness than those not in relationships, but parenthood was not associated with shyness. **Conclusions:** Mean-levels of shyness are likely to vary according to adopted social roles, gender, and age.

*Keywords:* shyness, mean-level variation, social roles, life span

### Does Shyness Vary According to Attained Social Roles? Trends Across Age Groups in a Large British Sample

Personality is usually considered to be a stable construct, yet much evidence exists suggesting changes across the lifespan. According to a theoretical model about *person-environment transactions*, changes in personality are assumed to be elicited by experienced events, strains associated with changing social roles, prospects, and self-perceptions as well as others' responses to behavioral changes (Roberts et al., 2008; Specht et al., 2011). Several scholars have suggested that personality changes normatively as individuals attain and occupy specific but different social roles during certain phases of the life span (Lucas & Donnellan, 2009; Roberts & Mroczek, 2008). However, possible changes in shyness have received little attention in the literature on personality change. Shyness involves discomfort and inhibition in social situations, specifically in novel social contexts, and is often considered to be an enduring, cross-contextual, and stable trait (Briggs, 1988; Buss & Plomin, 1984; Crozier, 2000). The goal of the current research was to assess the extent to which shyness varies over the lifespan in relation to changing social roles.

Personality changes have most often been defined as mean-level changes in scores obtained by people in different age groups (Roberts et al., 2006). In the case of shyness, however, such studies are rare. Shorter longitudinal studies focusing on childhood indicate that both teacher- and parent-reported shyness appears to decrease between ages 4 and 10 (Eisenberg et al., 1998). Similarly, parent-ratings reveal mean-level decreases in shyness between ages 4 and 23 (Dennissen et al., 2008; Hutteman et al., 2009). There are some inconsistencies in these findings, however, as other studies report an increase in shyness between ages 1.5 and 12.5 years (Karevold et al., 2011, 2012). These differences are likely due to measurement variability, because shyness has been conceptualized in many different ways and overlaps a great deal with other constructs involving social fears, such as

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behavioral inhibition, social anxiety, social withdrawal, and social reticence (Crozier, 2000).

In addition, most researchers have focused on children or young adults, even though late-developing shyness is more stable throughout adulthood than early-developing shyness (Kerr, 2000).

In addition, little is known about how the adoption of diverse social roles may affect mean levels of shyness. In a 30-year longitudinal study, Caspi et al. (1988) reported that shy American men left their parental homes and assumed key social roles (e.g., relationship formation; career trajectories) later than non-shy men. Shy and non-shy women, on the other hand, tended to have similarly conventional lives with respect to marriage, motherhood, and homemaking (Caspi et al., 1988). In a follow-up study comparing these American adults with Swedish peers, Kerr et al. (1996) reported that the shy Swedish and American men were similar with respect to delayed marriage and fatherhood, but that shyness appeared not to affect the career trajectories of the Swedish women (Kerr et al., 1996). Shy American and Swedish women both married and had children much like their non-shy counterparts, although they attained lower levels of education (Kerr et al., 1996). However, the study involved people born in 1928-1929, and may be generation-specific. Thus, it remains important to compare variations in shyness levels in people of different ages and in different social roles.

Studies focused on shyness find that females tend to have somewhat higher mean scores on measures of shyness and related constructs than males in early childhood (Burgess et al., 2006; Crozier, 1995), adolescence (Zimbardo, 1977), and adulthood (Dell'Osso et al., 2003). Whether these gender differences depend on differences in the social roles that men and women adopt has not been thoroughly investigated. Further, other factors may contribute to personality variation across the lifespan. Most studies of age-related mean-level changes in personality calculate mean-levels based on raw scores without taking into account a number

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of important demographic variables, such as parents' education, own educational levels, and income. People with high-status occupations and high income levels may have attained their positions by adapting their personality to their given circumstances, either through processes of selection or personality evocation (Roberts et al., 2008). *Active niche picking* refers to the process whereby people are drawn to and select experiences whose qualities are consistent with their own personalities (Roberts et al., 2008). For example, extraverted individuals appear to prefer social or enterprising jobs (Ackerman & Heggestad, 1997), and people tend to enter relationships with partners who favor their existing personality traits (Botwin et al., 1997). Thus, personality might alter when new social roles are assumed, whereas personality continuity would be enhanced if individuals selected personality-reinforcing situations.

In this study, we examined mean-level age differences in shyness from late adolescence to old age. Using data from a large cross-sectional study conducted in the UK, we measured shyness with items assessing aspects of both introversion and neuroticism. Research shows that being shy and being unsociable are different personality dispositions (Asendorpf & Meier, 1993), and what distinguishes shyness from unsociability is a component of neuroticism, generating the term *shy-neurotic* (Briggs, 1988). In order to validate the measure of shyness used here, we first compared shyness to other related measures (Study I). We then compared a large number of men and women ranging from 17 to 70 years of age in 11 age groups with respect to estimated mean levels of shyness, controlling for various indicators of socio-economic status (Study II). In addition, we compared men and women in various social roles – such as those with and without children, in various employment stages, job categories, and in or without relationships – on mean-levels of shyness in the various age groups (Study II).

The studies were designed to test our predictions that: a) The composite measure of shyness comprising introversion and neuroticism would be highly related to other well-

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known measures of social fears (Study I); b) Mean-levels of shyness across the life-span would be lower for women than for men, but might show different effect sizes for men and women across the age groups (Study II), and c) Mean-levels of shyness would vary depending on the various social roles adopted by the respondents (Study II). Based on the theories of person-environment transaction and active niche picking, we expected that shyness would be lower for people in employment than for those at home or unemployed; that individuals with jobs requiring greater social skills would have lower mean-levels of shyness; that people in relationships would have lower mean-levels of shyness than those not in relationships, and that parents would have lower mean-levels of shyness than peers without children.

### **Study I**

#### **Method**

##### **Procedure and Participants**

The data were collected via an online survey using Qualtrics Panels, a survey company that recruits online samples. Participants were randomly selected based on required criteria, using techniques to avoid duplication and ensure validity. The data were collected during November and December 2014 from 239 randomly selected participants ranging from 18 to 79 years of age (61% female;  $M_{\text{age}} = 50.58$ ) who lived in the United Kingdom. Potential respondents were invited via e-mail, and were informed that the survey was for research purposes only, how long it was expected to take, and what incentives were available. The invitation did not include specific details about survey contents, so as to avoid self-selection bias. It took roughly 20 minutes to complete the survey, which the participants could finish at their leisure. Participants answered questions about personality, shyness, social anxiety, and other related concepts. All participants received an incentive, such as cash, airline miles, or gift cards.

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To match the sample in Study II, participants aged over 70 years were excluded, resulting in a final subsample of 211 participants (64% female;  $M_{\text{age}} = 47.90$ ). We compared participants who were excluded with those left in the final sample by way of a binary logistic regression using all measures as independent variables to predict being or not being in the final sample. No significant results emerged. Missingness was 6.2% for all study variables in the final sample.

### Measures

**Composite Measure of Shyness.** Items from The Big Five Inventory (John et al., 1991) were used to measure shyness. The original BFI scale comprises 44 items and the items used to create the shyness scale were those assessing the sub-facets Assertiveness (from the Extraversion scale; reversed) and Anxiety (from the Neuroticism scale), consistent with previous conceptualizations of shyness (Briggs, 1988; Cheek & Buss, 1981). The items used were “Is talkative (R),” “Is reserved,” “Tends to be quiet,” “Has an assertive personality (R),” “Is sometimes shy, inhibited,” “Is relaxed, handles stress well (R),” “Worries a lot,” “Remains calm in tense situations (R),” and “Gets nervous easily.” The participants responded on a 5-point Likert-scale ranging from (1) *Disagree strongly*, (2) *Disagree somewhat*, (3) *Neither agree nor disagree*, (4) *Agree somewhat*, to (5) *Agree strongly*. The internal reliability (Cronbach’s alpha) for this scale was .83.

**Shyness.** We measured shyness using the widely used Revised Buss and Cheek scale (Crozier, 2005). Examples of items were “I feel tense when I’m with people I don’t know well,” “I am socially somewhat awkward,” and “I am often uncomfortable at parties and other social functions.” The response options ranged from (1) *Very uncharacteristic or untrue*, (2) *Uncharacteristic*, (3) *Neutral*, (4) *Characteristic*, to (5) *Very characteristic or true*. The Cronbach’s  $\alpha$  for this scale was .92.

**Social Anxiety.** Social anxiety was measured using the Social Phobia Screening

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Questionnaire (Furmark et al., 1999) which asks about eight social situations that tend to elicit social anxiety, such as “speaking in front of a group of people,” “maintaining a conversation with someone unfamiliar,” and “initiating a conversation with someone unfamiliar.” Participants rated their fears on a four-point scale ranging from (0) *No distress* to (4) *Severe distress*. The Cronbach’s  $\alpha$  for this scale was .95.

### **Analytic Strategy**

We used SPSS 22.0 to calculate correlations among scores on the three scales measuring social fears, as well as to assess differences between men and women using *t*-tests.

## **Results**

### **How Does a Composite Measure of Shyness as Introversion plus Neuroticism Compare to Other Well-Known Measures of Social Fearfulness?**

As Table 1 shows, scores on the composite shyness scale were highly correlated with scores on the other scales measuring shyness and social anxiety, indicating that the composite shyness scale appeared to be a valid indicator of shyness, and this measure alone was thus used in Study 2. Although women had higher mean scores than men on all constructs, as expected, the differences were not significant, as confirmed by the small effect sizes. This may be due to the small sample size, however.

## **Study II**

### **Method**

#### **Procedure and Participants**

The data were taken from a large online survey called “The Big Personality Test,” which was advertised and run by the British Broadcasting Corporation (BBC) on its “Lab UK” Web site (<https://ssl.bbc.co.uk/labuk/experiments/personality>). Participants provided demographic information and answered questions regarding their life histories, personality, and well-being. The data were collected between November 2009 and April 2011.



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Participants were given a description of and information about the survey prior to participation. They were told that they could withdraw from the survey at any time, and ignore or skip any questions, especially sensitive items regarding their childhoods. It took roughly 30 minutes to complete the survey, which the participants could complete at their leisure. After finishing the survey, the participants were informed about their personalities. They were also provided with details of organizations they could contact should they wish to discuss any negative reactions elicited by answering the survey questions. By the end of the data collection in April 2011, a total of 564,371 individuals had completed the survey.

### Sample

For this study, we chose participants aged 17-70 years. We excluded participants younger than 17 and older than 70 years and divided the participants into 11 different age groups. This resulted in a target sample of 552,663 participants (64% female;  $M_{\text{age}} = 34.19$  years). We compared participants who were excluded with those in the target sample on all variables used in this study. These measures were used as independent variables to predict being versus not being in the final sample, respectively, by way of a binary logistic regression. Higher education levels (O.R. = 1.11; CI = .72 – 1.70), higher levels of mother education (O.R. = 1.18; CI = .84 – 1.67) and higher income level (O.R. = 1.02; CI = .77 – 1.35) significantly increased the likelihood of being in the target sample. In addition, women were 2 times more likely than men to be in the target sample (O.R. = 2.34; CI = 1.12 – 4.89). Missingness ranged from 3.5-11.9% for study variables in the target sample.

### Measures

**Age Groups.** Participants were divided into 11 different age groups. Individuals aged 17-20 ( $n = 65,118$ ), 20-25 ( $n = 121,885$ ), 26-30 ( $n = 76,007$ ), 31-35 ( $n = 62,474$ ), 36-40 year-olds ( $n = 59,500$ ), 41-45 ( $n = 50,798$ ), 45-50 ( $n = 40,266$ ), 51-55 ( $n = 30,555$ ), 56-60 ( $n = 22,268$ ), 61-65 ( $n = 16,800$ ), and 66-70 ( $n = 6,992$ ) were grouped together.

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**Composite Shyness.** Using the same method as in Study I, the same items from the BFI (John et al., 1991) were used to measure shyness. The internal reliability (Cronbach's alpha) for this sample was .79.

**Social roles.** We chose four indicators of social roles in this study – occupational status, occupational category, relationship status, and parenting status.

**Occupational status.** The participants were asked to choose one of the following options referring to their current occupational status: (1) Still at school, (2) At university, (3) In full time employment, (4) In part time employment, (5) Self employed, (6) Homemaker/full-time parent, (7) Unemployed and (8) Retired. The participants were grouped into three meaningful comparison categories: 1) Employed (comprising people in full- and part-time employment, as well as those who were self-employed; 58.2%), 2) At home (comprising the homemaker/full-time parent category; 4.1%), and 3) Unemployed (comprising the unemployed category; 4.0%). The participants who replied “Still at school,” “At university,” or “Retired,” along with participants with missing data, were dropped from the analyses (33.7% of the sample).

**Occupational category.** The participants were asked to select a category which best described their current occupation. The categories were Accounting/finance (4%), Administration (6.7%), Business development (1.0%), Consultancy (1.6%), Customer service (3.8%), Education/training (13.3%), Engineering (2.7%), Executive/senior management (1.4%), Healthcare (5.2%), IT (4.6%), General management (1.8%), Government/military (2.4%), Homemaker (2.9%), Legal (1.5%), Manufacturing/operations (0.9%), Media (2.7%), Medical/science (4.7%), Personnel (0.7%), Professional (5.7%), Purchasing (0.3%), Sales/marketing/advertising (4.9%), Skilled labor (1.9%), and Other (16.6%). The remaining participants with missing data (8.7%) were dropped.

**Relationship status.** The participants were asked “Are you currently in an intimate

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relationship?” and could respond (0) *No*, (1) *Yes*, to (2) *Rather not say*. Twenty-seven percent of the sample reported not being in a relationship, compared to 57.7% who reported being in a relationship at the time. The others were dropped (15.3%).

***Parenting status.*** The participants were asked how many children they had. The response options ranged between (0) *None* to (6) *6 or more*. In order to make theoretically meaningful comparisons in subsequent analyses, this variable was recoded into a dichotomous variable: having no children (0), and having any number of children (1). The reasoning behind this was that individuals with children – regardless of the number – had attained experiences linked to parenting, compared to individuals who never had children. Most (51.6%) of the participants did not have children, while 34.4% reported having 1 or more children. Those who did not answer the question (14.1%) were dropped.

***Control variables.*** Various indicators of socio-economic status pertaining to the participants’ highest level of formal schooling, own income levels, and mothers’ and fathers’ education were controlled for. For analyses concerning parenting status, having children living at home was added as an additional control variable.

***Own education.*** The participants were asked about the highest level of education they had completed. The response items were: (1) Did not complete GCSE/CSE/O-Levels, (2) Completed GCSE/CSE/O-Levels, (3) Completed post-16 vocational course, (4) A-Levels, (5) Undergraduate degree, (6) Postgraduate degree to (7) I am still in education. As we wanted to control for already obtained educational levels, this variable was recoded and those individuals still in education, as well as individuals with missing data, were dropped (27%). Three percent of the selected sample did not complete their O-levels; 13.0% had completed their O-levels; 4.5% had completed post-16 vocational courses; 11.7% had completed A-levels; 24.9% had undergraduate degrees, and 15.9% had obtained postgraduate degrees.

***Mothers’ and fathers’ education.*** The participants reported on the highest level of

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formal schooling their mother/main female caregivers and father/main male caregivers had completed. The response items included: (1) Did not complete GCSE/CSE/O-Levels, (2) Completed GCSE/CSE/O-Levels, (3) Completed post-16 vocational course, (4) A-Levels, (5) Undergraduate degree, (6) Postgraduate degree, (7) Don't know, and (8) Not applicable. Regarding mothers, 18.3% had not completed O-levels; 21.7% had completed O-levels; 7.4% had completed post-16 vocational courses; 8.5% had completed A-levels; 12.9% had completed undergraduate degrees, and 7.1% had completed postgraduate degrees. Regarding fathers, 17.6% had not completed O-levels; 16.3% had completed O-levels; 8.8% had completed post-16 vocational courses; 7.6% had completed A-levels; 12.9% had completed undergraduate degrees, and 10.2% had completed postgraduate degrees. Participants who selected either of the final two options or had missing data for mothers (24.3%) and fathers (26.6%) were dropped from the sample.

***Income.*** The participants were asked about their total gross annual or weekly household income. The response options were: (1) Up to £9,999 per annum (£199 per week), (2) £10,000 to £19,999 per annum (£200 - £389 per week), (3) £20,000 to £29,999 per annum (£390 to £579 per week), (4) £30,000 to £39,999 per annum (£580 to £769 per week), (5) £40,000 to £49,999 per annum (£770 to £969 per week), (6) £50,000 to £74,999 per annum (£970 to £1,449 per week), (7) £75,000 or more per annum (£1,450 or more per week), (8) Don't know, and (9) Rather not say. Respondents who selected either of the last two response options or had missing data were dropped (32.2%). In the selected sample, 8.4% of participants made up to £9,999 per annum; 12.9% made up to £19,999 per annum; 13.7% made up to £29,999 per annum; 10.4% made up to £39,999 per annum, 7.1% made up to 49,999 per annum; 8.7% made up to £74,999 per annum, and 6.6% made £75,000 or more per annum.

***Children living at home.*** In analyses looking at parenting status, we controlled for the

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number of children living at home. The participants were asked: “If you have children, do some or all of them still live at home?” The response items were (0) *No*, (1) *Yes*, to (3) *Not applicable*. Participants who answered Not applicable or had missing data were dropped (65.5%). There were 8.5% who reported having no children living at home, compared to 25.9% who reported having children living at home.

### **Analytic Strategy**

To compare men and women remaining in the 11 different age groups on estimated mean levels of shyness while controlling for various indicators of socio-economic status, we employed a series of General Linear Models (GLM's) using SPSS 22.0. GLM allows for modeling the values of multiple dependent variables based on their relationships to categorical as well as scale predictors, with the assumption that the relationships are linear. We employed full-factorial models, with built-in interactions for all factors used in the analyses predicting the dependent variable (shyness). To test for differences between different factor levels (such as men and women, or various age groups), we used simple contrasts in the models.

## **Results**

### **Estimated Mean Levels of Shyness in Various Age Groups across the Lifespan**

We conducted a GLM with shyness as the outcome, gender and age group as factors, and simple contrasts, controlling for own education, mothers' and fathers' education, and income levels,  $F(25, 265406) = 279.69, p < .001$ . The means and standard deviations are shown in Table 2, with the model statistics shown in Table 3. As Table 2 shows, women had higher levels of shyness overall, as expected. As Table 3 indicates, all variables except for fathers' education were significant predictors. Simple contrasts showed significant differences between men and women ( $Est. = .05; p < .001$ ) and between all age groups ( $Est.$  ranging from .07 to .19;  $p < .001$ ).

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We next computed effect sizes for the overall trends in shyness by calculating the differences between adjacent age groups, standardizing them using the standard deviation for the first age group and using the estimated means controlling for SES. In Figure 1, numbers below zero suggest decreases in mean-levels, whereas values above zero suggest increases in mean-levels of shyness. A linear trend line is also provided. As the figure shows, there were some differences between mean-levels of shyness across the age groups for men and women. Women had slightly more scores below the overall mean, especially until about age 45, where their means appeared to move above the overall mean. Men's means continued to decline until old age, with slight variations after age 43. Overall, the linear trend lines indicated that, when we controlled for various sociodemographic factors, men appeared to become less shy with increasing age, whereas women tended to be equally shy, on average, regardless of age.

### **Do Mean-Levels of Shyness Vary in Relation to Social Roles?**

*Occupational status.* We conducted GLM's with shyness as the dependent variable, and age group, gender, and occupational role as factors, controlling for own and parental educational levels as well as income in the analyses,  $F(69, 242398) = 115.19, p < .001$ . As Table 3 shows, own and mothers' education as well as own income were significant predictors, whereas fathers' education, gender, and the interactions between gender, age group, and occupational status were not. The only significant simple contrasts that emerged showed significant differences between the employed and the at-home individuals ( $Est. = -.20; p < .001$ ). In order to depict trends in relation to age, we represent these results in terms of 4-point moving averages (i.e., sums of 4 consecutive means divided by 4), which shows that employed participants had the lowest levels of shyness in all age groups. In all subsequent figures, age was split up in different categories to simplify the presentation of results. As is shown in Figure 2, the unemployed participants had the highest levels of

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shyness in the younger age groups, with at-home participants in age groups 31-50 and older reporting the highest mean levels of shyness. Overall, there was an association between occupational status and shyness.

*Occupational category.* We further probed the occupational social role by comparing men and women in the different age groups and in various occupational categories on mean-levels of shyness, while controlling for SES. This model was also significant,  $F(223, 265208) = 47.35, p < .001$ , and the results are shown in Table 3. All variables apart from fathers' education were significant predictors in a model including all the two-way and the three-way interactions between and among age groups, gender, and occupational category. Simple contrasts showed significant differences between men and women ( $Est. = .06; p < .001$ ), and between all age groups ( $Est.$  ranging from .10 to .16;  $p$  ranging from .05 to .001) except for between 17- to 19-year-olds and 66- to 70-year-olds (groups 1 and 11;  $Est. = .06; p = .15$ ) and between 61 to 65-year-olds and 66 to 70-year-olds (group 10 and 11;  $Est. = .06; p = .23$ ).

Figure 3 shows differences between men and women overall. Both men and women in sales had the lowest levels of shyness, whereas men and women in the unskilled category had the highest mean levels of shyness – with women being shyier than men. Overall, apart from those in the professional and the clerical categories, women had higher shyness levels across the occupational categories. Thus, these results indicate that both gender and age were associated with average levels of shyness in different occupational categories.

*Relationship status.* Mean levels of shyness for men and women in the various age groups in or without relationships were then compared. This model was also significant  $F(47, 263242) = 174.44, p < .001$ . The results are depicted in Table 3, which shows that gender and father's education were not significant predictors. The three-way interaction among gender, age group and relationship status was not significant either. Simple contrasts showed

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significant differences between all age groups (*Est.* ranging from .08 to .22;  $p < .001$ ), and for those in or without relationships (*Est.* = .09;  $p < .001$ ). Figure 4 depicts the significant interaction between age group, relationship status, and gender using 4-point moving averages. In general, women who were not in relationships showed the highest levels of shyness, especially in mid-life. Men without relationships had the next highest shyness levels, whereas men in relationships had the lowest shyness levels across the age groups. Thus, it seems that being in a relationship is negatively associated with mean levels of shyness, especially for women.

*Parenting status.* Finally, we compared men and women with any number of children to those without any children. Besides controlling for the various SES variables, we also controlled for having children who lived at home. The results for this model were again significant,  $F(48, 127608) = 58.55, p < .001$ . As shown in Table 3, most demographic variables were significant predictors in the model, apart from father's education. Gender and age group were not significant predictors in themselves, but the interaction between the two was significant. Nonetheless, none of the two-way interactions or the three-way interaction between the study variables and having children were significant. Thus, it seemed that having children was not associated with mean level age-related variations in shyness.

## Discussion

Shyness is often considered to be a stable trait or aspect of temperament (Briggs, 1988; Buss & Plomin, 1984), yet there is mounting evidence that personality changes throughout the life span in relation to strains associated with assuming numerous social roles, experienced events, changes in self-perceptions, and other's responses to these behavioral changes (Roberts et al., 2008; Specht et al., 2011). Nevertheless, mean-level variations in shyness have not been exhaustively investigated. Examining age differences in a large British sample, the current study provided evidence for variation in mean levels of shyness



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associated with gender, occupation, and relationship status, controlling for the effects of various sociodemographic variables. According to the person-environment transaction model, personality changes as a result of interactions between stable factors within the individual and environmental influences on the individual, with these factors affecting both stability as well as changes in personality (Roberts et al., 2008). Thus, people differ with respect to how they perceive their environments, which environments they favor, and also how others perceive and react to them in turn. Individuals thus both seek environments or aspects thereof which better complement their personalities, and change their personality in response to both their own expectations, as well as the demands of changing social roles and others' perceptions (Specht et al., 2011). Indeed, mean level changes in personality occur at any age and vary in accordance with life events such as traumatic experiences, love, and work (Löckenhoff et al., 2009; Roberts & Mroczek, 2008; Scollon & Diener, 2006), not simply in response to maturation (Specht et al., 2011). The current results are consistent with the person-environment paradigm, with mean-level variations across age groups evident well beyond the typical age of maturity.

The results of the current study indicated that women have higher mean-levels of shyness than men throughout adulthood. These gender differences are consistent with previous findings concerning early childhood (Burgess et al., 2006; Crozier, 1995), adolescence (Zimbardo, 1977), and adulthood (Dell'Osso et al., 2003). Nevertheless, an examination of effect sizes revealed that males' mean-levels of shyness began high but become progressively lower with age, whereas women's levels were more stable. This may perhaps be because men's shyness is related to self-regulation or emotion regulation, as suggested by Denissen and colleagues (2013). In a meta-analysis focused on the development of adolescent personality, they showed that conscientiousness and openness tended to decrease in early adolescence. Denissen and colleagues (2013) suggested that this was

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because, even though personality is initially shaped by physiological reactivity to various contextual features, it is gradually complemented by efforts to self-regulate in accordance with personal goals and societal norms. As peoples' goals and societal expectations change in the course of development, they need to practice self-regulation in order to adapt to higher standards (Denissen et al., 2013) and thus become better at regulating their emotions over time (Mauss et al., 2007) by employing lessons learned from past experiences (Aldwin et al., 1996). According to this reasoning, shy men would become better at handling their shyness over time, and thus older cohorts would appear less shy. Women, on the other hand, are initially more prone to rumination than men are, which may partly explain why depression is twice as common in adolescent girls (Tillfors & Van Zalk, 2015). In addition, men may be under more pressure than women to alter their shyness to accommodate gender stereotypes (Kerr et al., 1996). Another process behind this may be that of self-regulation, which may lead males to decrease their shyness more than females because of gender stereotyping. Even though we did not look at self-regulation, and do not have longitudinal data to confirm these speculations, the current findings indicate that the social and cultural context may help shape variations in mean-levels of shyness across the lifespan - perhaps especially in males.

Our results also highlighted several interesting findings concerning social roles. First, we found that people who were employed consistently had the lowest levels of shyness, whereas those who were unemployed or at home had the highest levels of shyness. Perhaps working outside the home requires the honing of social skills and the consequent lessening of social fears, thereby yielding lower levels of shyness in older cohorts. Consistent with this hypothesis, there is evidence that shyness is predicted by poor social skills (Miller, 1995). Conversely, spending a lot of time in familiar, socially unchallenging contexts (e.g., being at home) may result in higher mean-levels of shyness. In contrast, lower shyness may be linked to higher chances of obtaining a job in the first place. These potential bidirectional links

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remain to be tested in future studies.

Second, there were reliable distinctions between employment type and mean-levels of shyness: Individuals working in sales had the lowest mean-levels, whereas those working in unskilled jobs had the highest mean-levels of shyness. This could partially be the result of active niche picking, with people being drawn to experiences whose qualities are consistent with their own personalities (Roberts et al., 2008), such that, for example, shy people select jobs that do not require social skills, and thus remain shy. The association between occupation and shyness may also be explained by the *accentuation hypothesis* (Caspi & Moffitt, 1993). According to this hypothesis, when people transition into new, unpredictable situations and perceive pressures to conform but do not know how to behave adaptively, individual differences are likely to be accentuated. Early behavioral differences should therefore be heightened when people enter into new and uncertain situations. Using this logic, work places without apparent behavior protocols (such as unskilled jobs) are likely to heighten or accentuate individuals' shyness, whereas roles that involve selling compel individuals to behave in accordance with specific expectations. Nevertheless, even though people may choose work places to fit their levels of shyness, some effect of the work place on shyness is also likely to take place. In addition, as the current results indicate, gender may be a stronger predictor of mean-levels of shyness than occupational category.

Third, our results indicated that people in relationships had consistently lower levels of shyness across the lifespan than people who were not in relationships. Nevertheless, having children was not related to mean-levels of shyness. One way of explaining this is that having a partner is likely associated with a more lively social life, which may help combat social fears. Indeed, studies of shyness and relationships show that shyness is related to less overall social support and smaller social networks often centered around the family and select friendship groups (Jones & Carpenter, 1986; Van Zalk et al., 2011). Previous longitudinal

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studies of mean-levels of shyness have shown that shy men, as opposed to shy women, get married and enter into relationships as much as their non-shy peers, albeit somewhat later in life (Caspi et al., 1988; Kerr et al., 1996). Thus, even though shyness may delay the entry into family life, it does not appear to prevent people from entering into relationships and starting families. For shy individuals, then, perhaps merely being in relationships may help counteract the levels of social fears and foster supportive social networks. This would explain why having children did not further affect shyness: being in relationships may set in train the crucial processes.

The major limitation of the current study was the reliance on cross-sectional data, which prevented us from examining intra-individual changes over time. As a result, we are not able to specify the causal factors associated with different levels of shyness. In addition, the sample size in Study I was small compared to that of Study II. Study I was designed to explore the construct validity of the composite measure of shyness used in Study 2, and the sample was sufficiently large for this purpose.

The current study also had several strengths. First, Study II used a large British sample of people ranging in age from 17 to 70 years, thus effectively sampling much of the lifespan. Second, unlike the majority of other studies, we examined estimated mean levels of shyness controlling for own income and education, as well as mothers' and fathers' education, as suggested by Specht et al. (2011). Various sociodemographic variables may be related to age and, because this study was designed to identify age effects, these were controlled for. Indeed, the majority of these variables were significant predictors of shyness, which underscores the need to control for their effects. As such, the research provided much-needed knowledge about how mean-levels of shyness vary across the lifespan for people in various social roles.

In most parts of the world today, and especially in Western societies, being bold and

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assertive is valued more highly than being shy or socially fearful (Leary & Buckley, 2000). Such evaluations are based on conceptions of stability of individual differences, whereas the current findings show that mean levels of shyness may vary across the lifespan in relation to factors such as employment, type of work, and romantic relationship status. They add to a growing body of evidence that personality often changes over time, and may thus lend hope to individuals who fear that nothing can be done about their shyness.

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The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Table 1

*Correlations and Mean-Level Differences between Men and Women (using Independent Samples T-Test) on Various Measures of Social Fears*

Variables	Correlations (with 95% CI)		Mean (SD)	Mean (SD)	<i>t</i> -value	<i>df</i>	<i>p</i>	Lower	Upper	Cohen's <i>d</i>
	1	2	Women	Men				95% CI*	95% CI*	
1. Composite Shyness <sup>a</sup>	-		3.02 (.78)	2.97 (.64)	-.56	209	.58	-.26	.15	-0.08
2. Shyness <sup>b</sup>	.73 (.58 – .76) ***	-	2.85 (.82)	2.71 (.80)	-1.17	196	.24	-.38	.10	-0.17
3. Social Anxiety <sup>c</sup>	.64 (.44 – .62) ***	.78 (.63 – .79) ***	2.49 (.90)	2.41 (.88)	-.58	196	.56	-.34	.18	-0.09

*Note.* \*\*\* $p < .001$ . <sup>a</sup> Introversion and Neuroticism from The Big Five Inventory. <sup>b</sup>Buss & Cheek. <sup>c</sup>Furmark. \*Confidence Interval referring to Cohen's *d*.

Table 2

*Means and Standard Deviations from First Model on Shyness in Various Age-Groups*

Gender	<i>Model Shyness</i>		
	Ages	Mean ( <i>SD</i> )	<i>N</i>
Female	17-19	3.00 (.72)	3,554
	20-25	3.00 (.74)	24,455
	26-30	2.97 (.73)	28,912
	31-35	2.93 (.75)	25,429
	36-40	2.91 (.74)	23,044
	41-45	2.86 (.75)	18,896
	46-50	2.87 (.75)	14,721
	51-55	2.87 (.74)	11,216
	56-60	2.88 (.75)	7,556
	61-65	2.85 (.74)	4,992
	66-70	2.82 (.72)	1,601
Male	17-19	2.81 (.74)	2,447
	20-25	2.82 (.74)	15,007
	26-30	2.84 (.74)	17,047
	31-35	2.85 (.73)	15,130
	36-40	2.86 (.74)	14,263
	41-45	2.85 (.75)	11,558
	46-50	2.85 (.75)	8,893
	51-55	2.82 (.75)	6,678
	56-60	2.82 (.74)	4,841
	61-65	2.80 (.73)	3,595
	66-70	2.73 (.71)	1,598

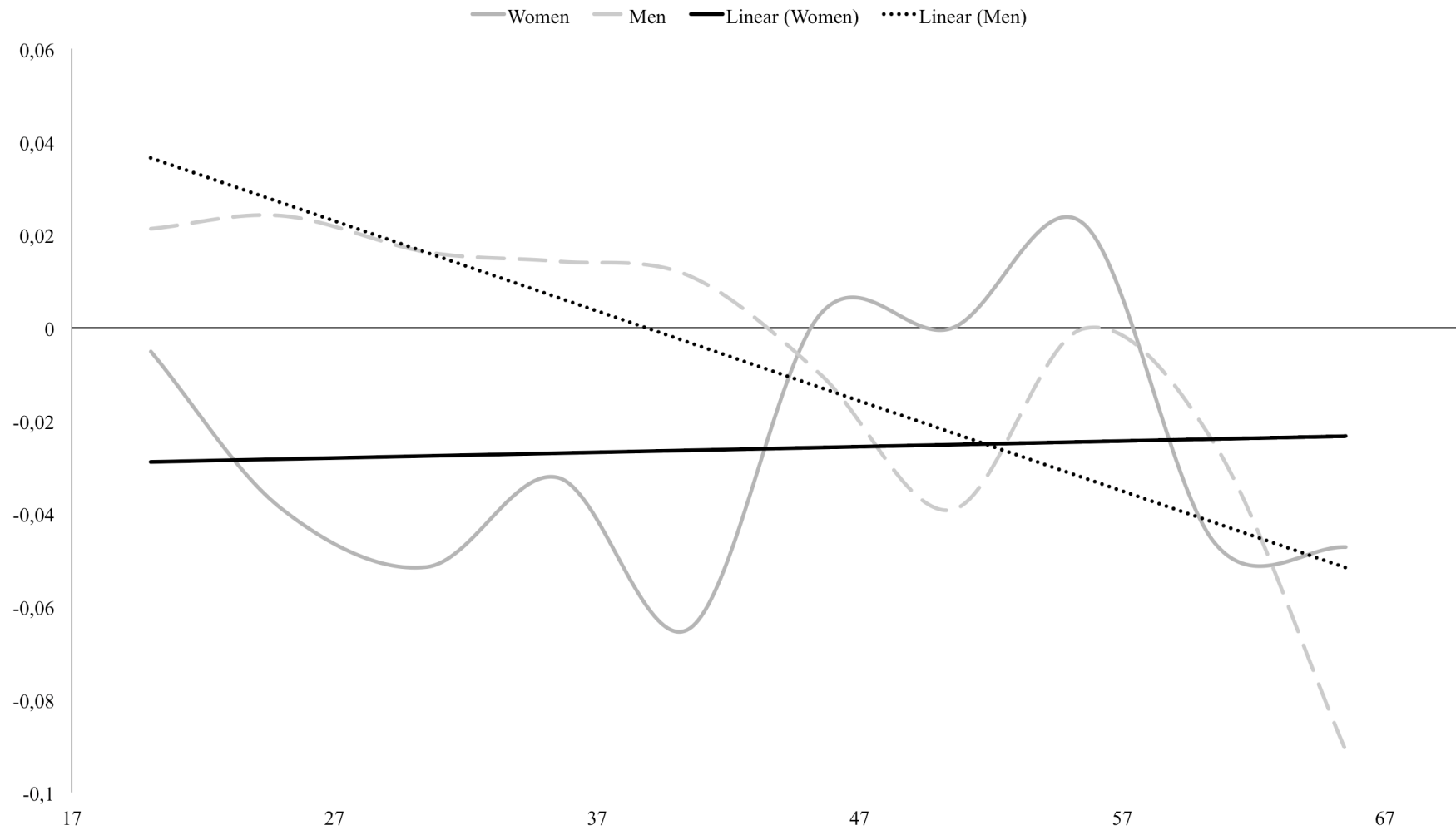
Table 3

*Results from General Linear Models with Shyness as Outcome*

	<i>Model Shyness</i>			<i>Model Occupational Status</i>			<i>Model Occupational Category</i>			<i>Model Relationships</i>			<i>Model Parenting</i>		
	df	F	<i>p</i>	df	F	<i>p</i>	df	F	<i>p</i>	df	F	<i>p</i>	df	F	<i>p</i>
Education	1	95.72	< .001	1	88.04	< .001	1	174.88	< .001	1	80.95	< .001	1	19.35	< .001
Mother's ed. <sup>a</sup>	1	119.71	< .001	1	119.58	< .001	1	110.67	< .001	1	132.77	< .001	1	39.25	< .001
Father's ed. <sup>a</sup>	1	.001	.97	1	.42	.52	1	.29	.59	1	.00	.99	1	.00	.96
Income	1	4821.48	< .001	1	4362.81	< .001	1	3460.61	< .001	1	3993.29	< .001	1	1827.54	< .001
Child at home	-	-	-	-	-	-	-	-	-	-	-	-	1	54.06	< .001
Gender	1	150.45	< .001	1	.23	.63	1	25.98	< .001	1	3.01	.08	1	.11	.74
AG <sup>c</sup>	10	50.63	< .001	10	2.18	< .05	10	7.62	< .001	10	54.80	< .001	10	1.23	.27
SR <sup>d</sup>	-	-	-	2	36.63	< .001	9	118.67	< .001	1	309.81	< .001	1	4.58	< .05
Gend. <sup>b</sup> *AG <sup>c</sup>	10	59.02	< .001	10	.60	.82	10	15.80	< .001	10	76.11	< .001	10	2.46	< .01
Gend. <sup>b</sup> *SR <sup>d</sup>	-	-	-	2	1.43	.24	9	10.12	< .001	1	275.56	< .001	1	3.08	.08
AG <sup>c</sup> *SR <sup>d</sup>	-	-	-	20	5.47	< .001	90	2.34	< .001	10	2.56	< .01	10	.78	.65
Gend. <sup>b</sup> *AG <sup>c</sup> *SR <sup>d</sup>	-	-	-	20	1.42	.10	90	2.03	< .001	10	1.30	.22	10	1.04	.41

Note. <sup>a</sup>Education. <sup>b</sup>Gender. <sup>c</sup>Age group. <sup>d</sup>SR = Variable indicating social role depending on model (Model 1 = occupational status; Model 2 = occupational category; Model 3 = relationships; Model 4 = children).

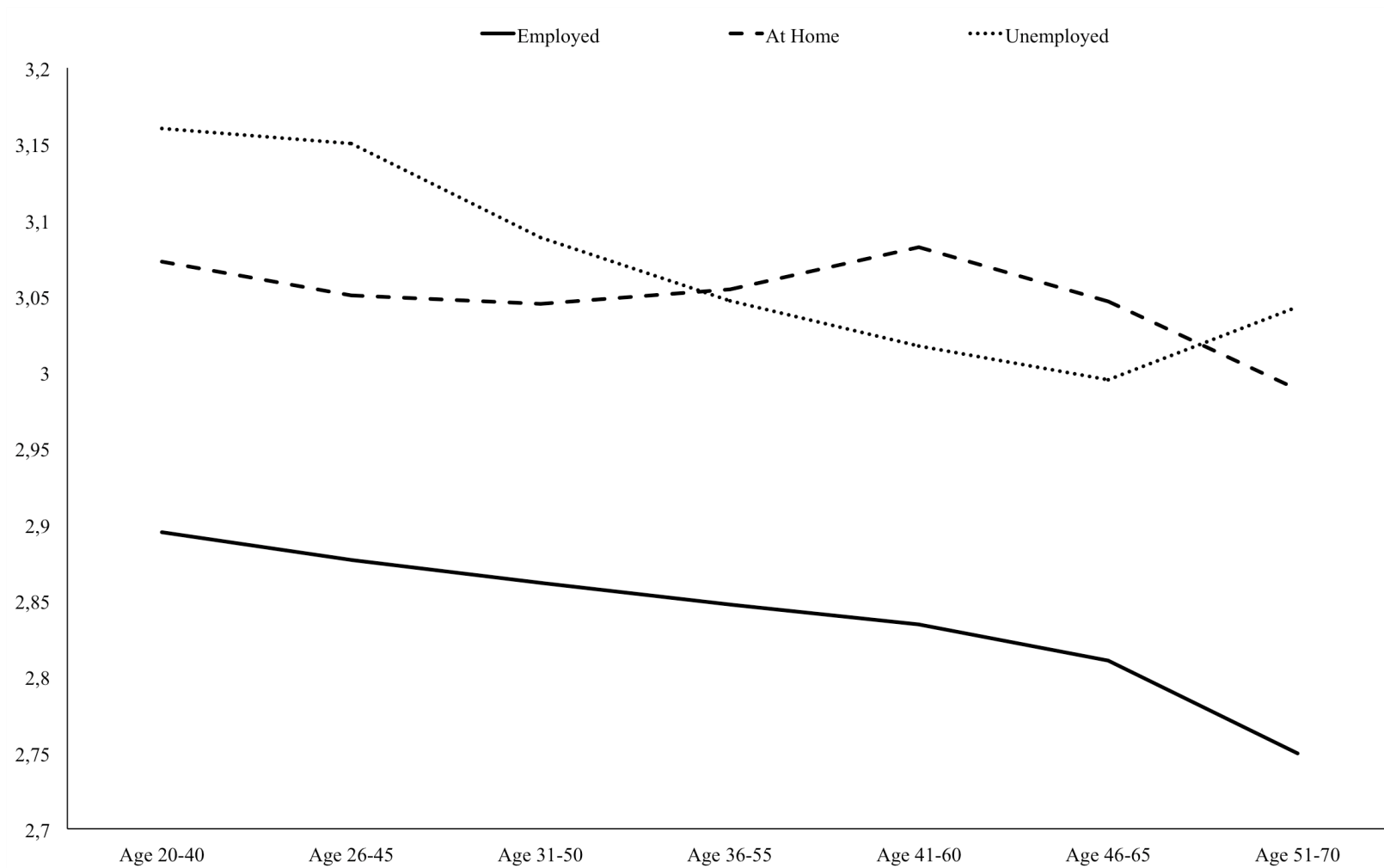
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*Figure 1.* Mean-level changes in shyness for men and women across the age groups, with linear trend lines. Numbers below zero suggest decreases in mean-levels, whereas values above zero suggest increases in mean-levels for shyness across the age groups.

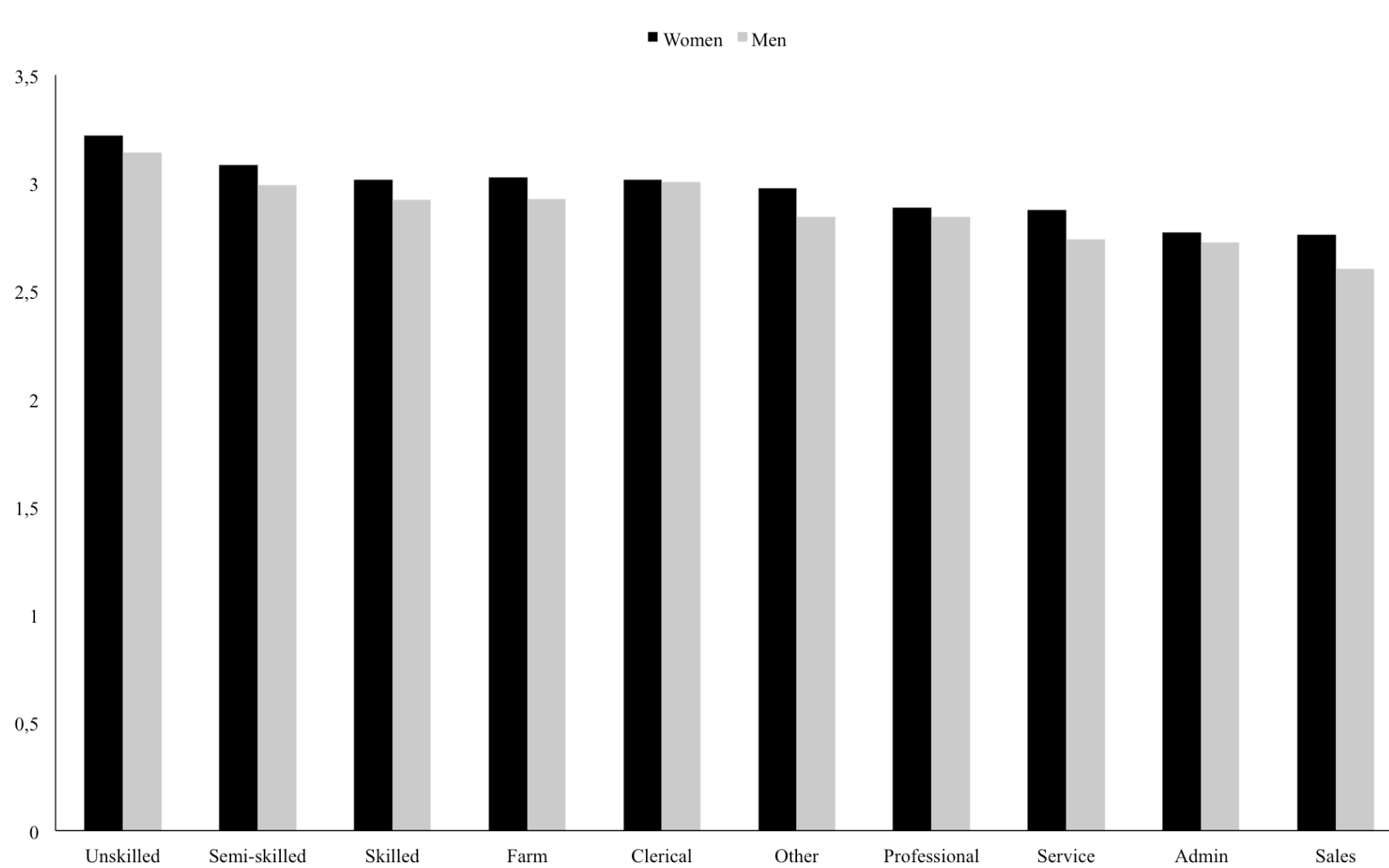


## SHYNESS TRENDS



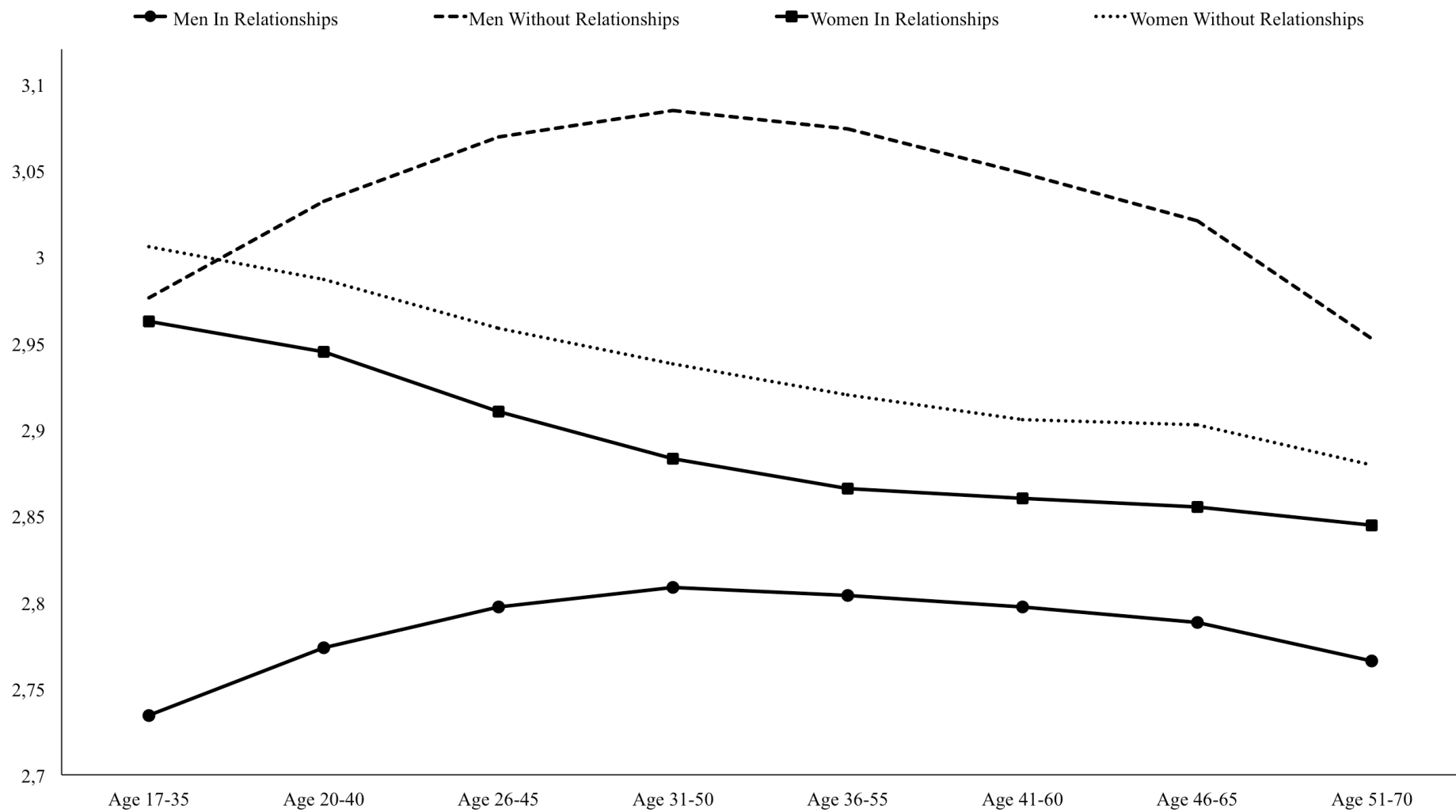
*Figure 2.* Estimated mean levels of shyness according to occupational status across the 11 age groups using 4-point moving averages and controlling for SES.

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*Figure 3.* Estimated mean levels of shyness according to occupational categories for men and women, controlling for SES.

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*Figure 4.* Estimated mean levels of shyness according to relationship status and gender across the age groups, using 4-point moving averages and controlling for SES.